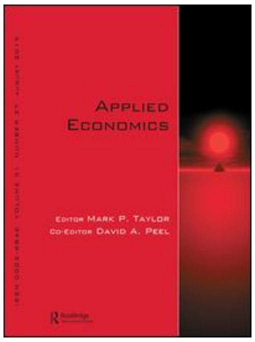

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An econometric analysis of Hispanic migration in the United States

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ABSTRACT
This paper investigates the spatial redistribution pattern of Hispanics driven by internal migration tendencies in the United States, using American Community Survey (ACS) Public Use Microdata Sample (PUMS) data. We formulate three econometric models to study the internal migratory behaviour of Hispanics. More importantly, to uncover potential congestion and spillover effects, we introduce a novel variable into migration research, namely, the *Neighbouring Hispanic Community*. Our findings indicate that domestic migration of Hispanics leads to agglomeration of Hispanics, with the strongest agglomeration occurring in the states bordering the most concentrated states. While the congestion effect tends to weaken the agglomeration in the most concentrated states, the Hispanic-sparse states do not tend to receive Hispanics. The underlying force of potential dispersion is congestion and spillover from the highly concentrated states to their nearby states. Incorporating personal attributes into the analysis has provided some support for the spatial assimilation theory.

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Hispanics; agglomeration; dispersion; internal migration; neighbour effect

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I. Introduction

Migration has dramatically become one of the pressing issues in the global society (see, e.g., Constant and Zimmermann 2013). Despite the steady decline in U.S. migration since the 1980s, geographic mobility in the United States remains higher than in its European counterparts (Molloy, Smith, and Wozniak 2011). In essence, migration is a dynamic socioeconomic process. We can reasonably expect that migrants leave original areas not only for higher economic well-being but also for better social support.[1] During the migration process, these two forces will come into play and determine the migratory direction and destination. This study focuses on Hispanics, the largest ethnic minority in the United States. It is interesting, accordingly, to inquire whether they will tend to move to co-ethnic communities or integrate into mainstream society.

Hispanics used to cluster mostly in the Southwest and some gateway metropolises such as Miami, Chicago, and New York. From 1980 to 2010, the Hispanic population grew from 14.6 million to 50.5 million; meanwhile, the swiftly growing Hispanic population has dispersed in the country (Pew Research Centre, September 6, 2016). Guzman and McConnell (2002) depicted the changes in the Hispanic population for the four regions of the United States from 1990 to 2000. Specifically, the West, accounting for the largest share of all Hispanics, and the Northeast, accounting for the smallest share, both experienced smaller proportional growth in Hispanic population than the other two regions (the South and the Midwest). Hispanic population growth in many new destinations has been fuelled by foreign-born in-migrants, including recently arrived immigrants from Mexico and other parts of Latin America (Lichter and Johnson 2009). Growth in manufacturing opportunities[2] in the Midwest and South and the recent immigration policy[3] have pushed many Hispanics away from the traditional areas of

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This article has been corrected with minor changes. These changes do not impact the academic content of the article.
[1]For example, Kritz, Gurak, and Lee (2011) used confidential Census data for 1990 and 2000 and analysed 24 Asian, Latin American and Caribbean immigration groups residing in 741 labour markets. Their results indicated that immigrants do not perceive internal migration as an either/or choice between economic outcome and social support. Instead, they prefer residential areas that allow them to maximize both economic and social benefits.
[2]For example, many companies in the meat packing industry recruited workers from other countries and from the border states after they relocated urban plants to rural areas in the Midwest and South in order to cut costs. Consequently, in some plants, workforces rapidly became dominated by Hispanic immigrants.
[3]For example, the Immigration Reform and Control Act encouraged the spread of migration to new areas of the United States, as unauthorized farm workers moved to the Midwest and elsewhere to escape detection.

settlement to new destinations, according to Guzman and McConnell (2002). Pew Research Centre (September 8, 2016) echoed the effect of employment opportunities in the Midwest. North Dakota, where a boom in Bakken shale oil production added thousands of jobs, experienced one of the fastest Hispanic population growths during the period 2007–2014. Durand, Telles, and Flashman (2006) also attributed the observed dispersion to the immigration policies and the profound structural changes that had taken place in U.S. labour markets.

On the other hand, migration research has continuously shown that compared to other minorities such as Asians, Hispanics are particularly attracted to their co-ethnic communities (e.g., Bartel 1989; Dunlevy 1991; Frey and Liaw 2005; Liaw and Frey 2007). Bartel (1989) studied the location choices of post-1964 immigrants and found that the co-ethnic community was the most important location factor for all immigrant groups. Dunlevy (1991) examined the settlement pattern of immigrants from eleven Latin and Caribbean nations, and found the attraction of a previously settled migrant stock to be strong for every nationality. Frey and Liaw (2005), through their analysis of inter-state migration, found that a concentration of co-ethnics in a state served to retain potential out-migrants and attract potential new migrants. Liaw and Frey (2007) examined the 1985–1990 and 1995–2000 destination choices of newly-arrived immigrants and found that the attraction of co-ethnic communities as destinations remained strong in both periods especially for Hispanics and Blacks. Earlier studies suggest that the internal migration of Hispanics has been highly channelized, following same-race and ethnic networks and social ties (Frey and Liaw 1999). Research on internal migration, using 1980 census and 1990 census data, does not support dispersion (Bartel and Koch 1991; Frey and Liaw 1999). Lichter and Johnson (2009) pointed out that the Hispanic population is dispersing geographically, but it is also clear that Hispanics remain highly concentrated in traditional ethnic enclaves or gateway areas. In addition, they found that while Hispanics are mobile, the largest movement is between Hispanic-concentrated Consolidated Public Use Microdata Areas (C-PUMAs), and more interestingly, the large number of Hispanics moving from Hispanic-concentrated C-PUMAs to Hispanic-sparse C-PUMAs is met with a similarly large number of Hispanics ‘returning’.

Most of the existing studies on Hispanic migratory behaviour focus on Hispanic immigrants. Kritz and Gurak (2015) indicated that the foreign born in both dispersed and emerging areas are significantly more likely to be internal migrants than recent immigrants. Are co-ethnic communities less attractive to Hispanics who have citizenship? Although immigration policies and labour market shocks have already dispersed some Hispanics to new destinations, does the strong co-ethnic community attraction (indicating a self-reinforcing effect of Hispanics clustering) bring Hispanics back to the traditional areas of settlement through internal migration over time? What redistribution pattern of Hispanics should we expect in the future? These are the questions that we attempt to address through an econometric analysis of American Community Survey (ACS) Public Use Microdata Sample (PUMS) data. The entire analysis focuses on the 48 contiguous states and the District of Columbia from 2007 to 2012.

In our empirical analysis, we formulate three econometric models to study the internal migratory behaviour of Hispanics. The estimation results will jointly explain the redistribution pattern of Hispanics over time. More importantly, to uncover potential congestion and spillover effects, we borrow ideas from spatial econometrics and introduce a novel variable to migration research, namely, the *Neighbouring Hispanic Community*. Our perception is that there are centripetal and centrifugal forces associated with Hispanic clustering. The centripetal force arising from the network effects and available amenities of co-ethnic communities reinforces clustering. As clustering reaches a certain density, the congestion effect brings in the centrifugal force, which tends to drive out or deter Hispanics. The most convenient way for Hispanics to get away from the undesirable congestion while still being able to travel back for the benefits (e.g., ethnic food, restaurants, entertainment, social gatherings, etc.) offered by co-ethnic communities would be to move to nearby areas. Therefore, our hypothesis is that without exceptional economic or policy shocks, the dispersion of Hispanics, if present, would mostly be a spilling over from the Hispanic-congested areas to neighbouring areas. The *Neighbouring Hispanic Community* variable enables this hypothesis to be tested.

Frey and Liaw (2005) emphasized the importance of cultural constraints and spatial assimilation in modelling migration. While the effect of cultural constraints has reached a consensus in the literature, the empirical evidence on the spatial assimilation of Hispanics is mixed. On one hand, some studies lend support to the phenomenon of Hispanic spatial assimilation. According to Massey and Mullan (1984), Hispanics with high socioeconomic status enter predominantly Anglo areas located in the urban environment. Frey and Liaw (2005) found that cultural constraints were less pronounced for the more educated minority migrants. Kritz and Gurak (2015) pointed out that Mexicans and Guatemalans who had advanced degrees were more likely to live in dispersed areas. On the other hand, Bartel (1989) found that the impact of co-ethnic communities on location choice was not weaker in the case of the highly-educated Hispanic immigrants. Wang (2012) observed the important connection between ethnic population concentration and ethnic businesses. Hispanic entrepreneurs, in spite of their higher income status, might still be attracted to co-ethnic communities. To further explore spatial assimilation, this study includes a wide variety of personal attributes of Hispanics in the analysis. The remainder of this paper is organized as follows. Section II describes the migration data. Section III specifies the empirical strategy. Section IV presents the estimation results and a conclusion follows in the last section.

II. Migration data

Data source

This study uses American Community Survey (ACS) Public Use Microdata Sample (PUMS) data published by the U.S. Census Bureau. ACS surveys the people who reside in the United States. The PUMS is a sample of the actual responses to the ACS, and consists of approximately one percent of the U.S. population. ACS PUMS data provide a rich array of information on individuals such as state of residence, sex, marital status, age, citizenship, place of birth, educational attainment, work status, income or earnings, and migration, etc. Since 2006, ACS has included people living in group quarters facilities and this change must be considered when comparing different years of ACS data. To have consistent data over time, this research uses ACS 1-year PUMS data for the years from 2007 to 2012. Due to limitations of data sources, most migration research uses cross-section data and makes only a snapshot of the migration processes. Therefore, a main advantage of using ACS is that it provides pooled cross-section data on migration.

Forming samples of Hispanics and Hispanic migrants

For each observation year, we form an initial sample of Hispanics from the person record of ACS 1-year PUMS data by limiting it to Hispanics aged between 22 and 64 who live in the 48 contiguous states and the District of Columbia. We attempt to analyse the migratory behaviour of Hispanics who are working adults or old enough to make migration decisions on their own. There are 1,266,155 individuals in the initial sample, of which only 21,575 (around 1.7%) migrated between states. The personal attributes of interstate movers and non-movers in our sample are summarized in Table 1. We observe that the attributes of being younger, male, unmarried, born with U.S. citizenship, proficient in English, and better educated all contribute to being more footloose. By eliminating the non-movers, we form the sample of migrants that is used in the estimation of the location choice models. The initial sample of Hispanics is used in the estimation of the departure choice model.

Generating Hispanic stock and bilateral migration flows

With the weights provided in the ACS PUMS, we generate the total number of Hispanics living in each state and bilateral migration flows between

Table 1. Personal Attributes of Interstate Movers and Non-Movers in the Sample (2007–2012).

Personal attributes		Interstate movers (total N = 21,575)	Interstate non-movers (total N = 1,244,580)
Age			
	Young	70.4	50.8
	Old	29.6	49.2
Gender			
	Male	55.4	49.9
	Female	44.6	50.1
Marital status			
	Married	46.9	57.0
	Otherwise	53.1	43.0
English proficiency			
	Does not speak English	6.7	8.9
	Does not speak English well	12.2	17.2
	Speaks English well	12.9	16.6
	Speaks English very well	38.1	36.1
	Speaks English only	30.1	21.2
Educational attainment			
	Does not have a high school diploma	25.4	33.8
	Has a high school diploma	20.3	23.0
	Acquired some education beyond high school but not enough to get a bachelor's degree	31.9	28.7
	Has a bachelor's degree	15.1	9.9
	Has a master's degree or professional degree or a doctorate degree beyond his/her bachelor's degree	7.4	4.5
Citizenship status			
	Born with US citizenship	57.3	47.0
	Acquired US citizenship by naturalization	11.7	17.6
	Immigrants without US citizenship	31.0	35.4

Notes: The numbers in the table are percentages.

states for each observation year. The PUMS allows users to determine the structure of the tabulation and the characteristics to be tabulated. With such microdata, we can flexibly examine specific groups of people such as foreign-born Hispanics who are aged from 22 to 64 and are not yet naturalized. PUMS estimates are expected to be somewhat different from ACS Pretabulated (or summary) Data.[4]

Data observations on Hispanic distribution

Figure 1 depicts the Hispanic population by state. California is by far the state with the largest Hispanic population, followed by Texas. Additionally, Florida, New York, Illinois, Arizona, New Jersey, and Colorado each has a Hispanic population of over a million. Spatially, we observe that states neighbouring the Hispanic-concentrated states tend to have relatively large Hispanic populations.

Taking advantage of the flexibility of PUMS data, we also examine the subgroups, namely, non-naturalized immigrants, naturalized immigrants, and Hispanics born with U.S. citizenship. To save space, we report the observations without including any figures. Similar to the distribution patterns of all Hispanics, California, Texas, Florida, and New York are the most concentrated states for Hispanic immigrants or Hispanics born with citizenship. For immigrants, California appears to be the

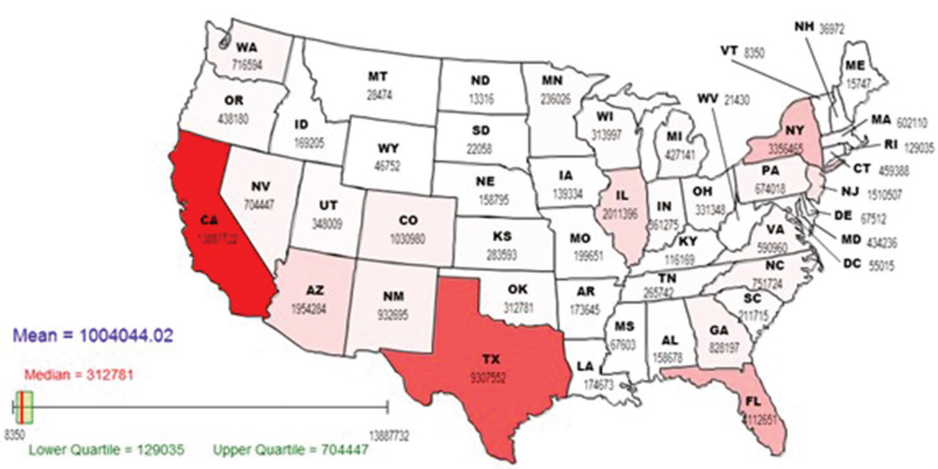

Figure 1. Hispanic Population by State. *Note*: The figure is created by the authors, using 1-year ACS PUMS data files from 2007 to 2012. The numbers reflect the average values over the observation period.

[4]See Pretabulated Data vs. Microdata on the Census website. https://www.census.gov/programs-surveys/acs/technical-documentation/pums/about.html

most important gateway, which is not closely followed by any other state. Over 29% of all Hispanic immigrants live in California. 15.7% of Hispanic immigrants live in Texas, 11% in Florida, and 7.3% in New York. A total of 63% of all Hispanic immigrants live in the top four Hispanic-concentrated states. Immigrants who have not obtained citizenship are more likely to live in Texas than in Florida, whereas immigrants who are naturalized are more likely to live in Florida than in Texas. Similarly, for the three states following the top four, immigrants who have not obtained citizenship are more likely to live in Illinois and Arizona than in New Jersey, and the pattern is reversed for immigrants who are naturalized. For Hispanics born with U.S. citizenship, California still ranks as the No.1 state, but not by a huge lead, as Texas immediately follows. 27.7% of these Hispanics live in California and 20.8% live in Texas. The No.3 state Florida has only 6.8% and the No.4 state New York has 6.5%. It is worth noting that Arizona surpasses Illinois and New Jersey to rank No.5 in having Hispanics born with citizenship, and New Mexico and Colorado beat quite a few other states with a large Hispanic population to rank No. 8 and 9, respectively.

Data observations on Hispanic migration

Next, we turn to provide some observations on migration flows. Which states tend to send out Hispanics and which states tend to receive Hispanics? By comparing Figures 2 and 3, some interesting observations emerge. First of all, the two figures look similar, suggesting that the states that send out many Hispanics are concurrently receiving many. Second, in referring to Figure 1, it appears that Hispanics are moving among the states with large Hispanic populations, which is consistent with the findings in Lichter and Johnson (2009). Lastly, among the most Hispanic-concentrated states, California, New York, Florida, Illinois, and New Jersey have seen more Hispanics moving out than moving in, especially New York and California. Texas, Arizona, New Mexico, and Colorado have seen more Hispanics moving in than moving out, this being especially true for Texas.

III. Empirical strategy

We attempt to shed light on the redistribution pattern of Hispanics by analysing their internal migratory behaviour. The main question of this research concerns whether internal migration of Hispanics leads to agglomeration or dispersion of Hispanics. In the following analysis, we formulate econometric models to detect the push or pull effects of co-ethnic communities. A strong pull effect and the absence of a push effect of co-ethnic communities suggest agglomeration, whereas the opposite suggests dispersion. Different from all the existing studies, our models include neighbouring co-ethnic communities to investigate potential congestion and spillover effects. The entire analysis focuses on the 48 contiguous states of the U.S. and the District of Columbia from 2007 to 2012. All explanatory variables are entered with a one-period lag to avoid reverse causality.

Departure choice model

To analyse Hispanics' departure choices, we use a binary logit model, where the dependent variable is the probability of an individual i leaving the current state j for another state. This is defined as:

$$P(leave) = \frac{\mathbf{exp}\left(Z_{ij}'\beta\right)}{1 + \mathbf{exp}\left(Z_{ij}'\beta\right)} \quad (1)$$

where $\boldsymbol{Z_{ij}}$ includes the location characteristics of the state j and personal attributes of the individual i, and β is the vector of parameters to be estimated. The model will be estimated using the maximum likelihood method. To determine whether the redistribution of Hispanics involves agglomeration or dispersion, our key variables of interest are *Hispanic Community* and *Neighbouring Hispanic Community*. A negative coefficient for *Hispanic community* suggests that Hispanics are tied to the co-ethnic community and that the out-migration rate from Hispanic-concentrated states tends to be lower, which would be evidence against Hispanic dispersion. A negative coefficient for *Neighbouring Hispanic Community* implies that large co-ethnic communities in neighbouring states reduce the

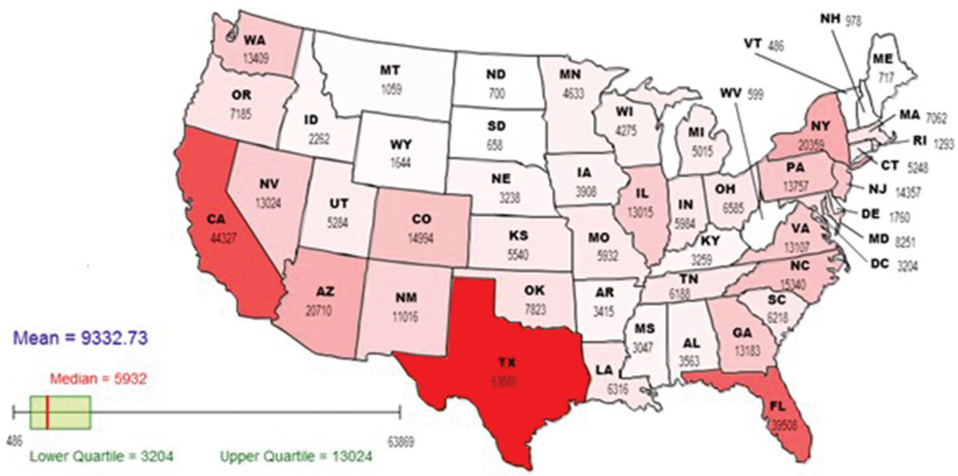

Figure 2. Hispanic Inflows by State. *Note*: Same as Figure 1.

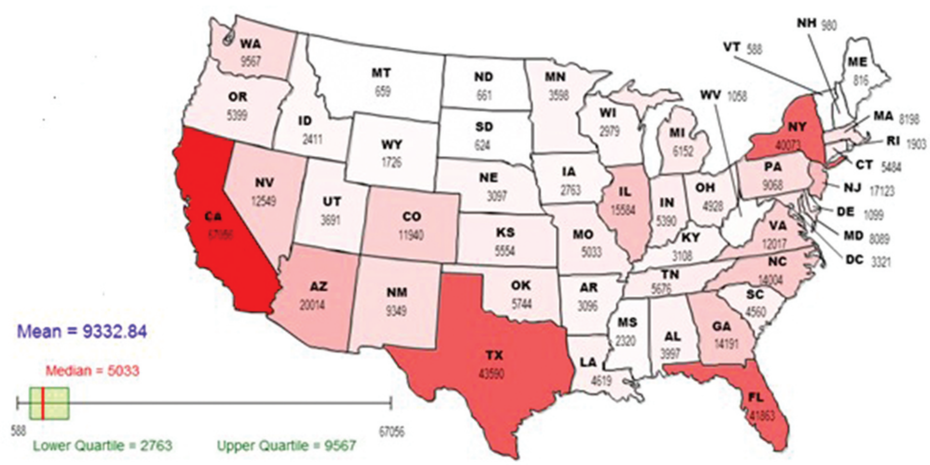

Figure 3. Hispanic Outflows by State. *Note*: Same as Figure 1.

likelihood of out-migration, which would be evidence in support of the Hispanic spill-over hypothesis. The inclusion of personal attributes helps reveal what kinds of people are more likely to migrate out of their current state.

Location choice model I

When Hispanics decide to move, where are they headed? We specify a McFadden's Choice Model, which is an alternative specific conditional logit model,[5] to analyse the effects of a destination's characteristics on the location choices of Hispanic migrants. Following Bartel (1989) and Scott, Coomes, and Izyumov (2005), we further enter personal attributes into the analysis to interact with key location characteristics with a view to uncovering how personal attributes might affect Hispanics' ties to co-ethnic communities.

Assume that Hispanic migrants attempt to maximize their utility associated with the choice of a new settlement location. A migrant faces a set of J destination choices. The utility for a migrant i choosing the state j is denoted as $\boldsymbol{U_{ij}}$. A migrant i chooses the state s such that

$$U_{is} > U_{ij}, \quad i \in I,\ j, s \in J,\ and\ j \neq s \qquad (2)$$

[5]While it is possible for us to include both alternative specific and case-specific variables, we omit the case-specific variables, as the results of such variables do not help our research purposes here. For example, if we included English ability dummies, the results would show how English ability might affect an individual's decision to choose each state over the base state.

where $\boldsymbol{I}$ is the set of migrants and $\boldsymbol{J}$ is the set of destinations.

The utility is not observable, yet is determined by location characteristics and personal attributes.

$$U_{ij} = X_{ij}^{'}\gamma + \varepsilon_{ij} \tag{3}$$

where X_{ij} is a series of observable location characteristics along with interactions of personal attributes and key location characteristics, whereas γ is the vector of parameters to be estimated. The random error, ε_{ij}, is assumed to be independent and identically distributed. As shown in McFadden (1974), the probability of a migrant i choosing the state s is given as

$$P_{is} = \frac{\mathbf{exp}\left(X_{is}^{'}\gamma\right)}{\sum_{j=1}^{n}\mathbf{exp}\left(X_{ij}^{'}\gamma\right)} \tag{4}$$

where n equals the number of possible locations in the destination set J, and in our study n = 49. The parameters γ are estimated using the maximum likelihood method.

The conditional logit model applied in this study follows the assumption of independent errors in the utility function and the property of the Independence of Irrelevant Alternatives (IIA). The IIA property states that the pairwise choice comparisons are not affected by the characteristics of alternative choices other than the pair under consideration (Cameron and Trivedi 2005). In migration studies, this property may be a potential problem. However, as discussed by Scott, Coomes, and Izyumov (2005) and Christiadi and Cushing (2008), for such a large model with so many choices, it is impractical to conduct a complete set of tests for IIA or to use alternative models that allow for a partial or full relaxation of IIA. Furthermore, Dahlberg and Eklöf (2003) showed that as long as the model is not too parsimonious, the conditional logit model leads to exactly the same conclusions as models that relax the IIA assumption. Therefore, we assume IIA in our estimations.

Location choice model II

To further explore the possible spillover of Hispanics from the most concentrated states, we formulate a multinomial model. Based on Hispanic population size, we differentiate the states into eight categories. Please refer to Table A3 for the classification of the states. Unfortunately, due to the diversity of the states in each category, it is impossible to come up with a reasonable set of locational characteristics for each category. For example, Minnesota and South Carolina both have a Hispanic population of slightly over 200,000 and thus belong to the fourth category. However, they are very different in terms of their urbanization rates, population densities, unemployment rates, education, health care, and crime rates, etc. One, therefore, cannot come up with a common set of location characteristics to describe both Minnesota and South Carolina. Fortunately, with location characteristics pertaining to a state chosen by Hispanic migrants, we can study how an increase in *Neighbouring Hispanic Community* might affect the chances of Hispanics moving into each category of state. If there were congestion and spillover effects, we would expect to see that an increase in *Neighbouring Hispanic Community* significantly decreases the likelihood of Hispanics migrating into the most concentrated categories and increases the likelihood of Hispanics migrating into the next most concentrated categories.

Assume that Hispanic migrants attempt to maximize their utility associated with the choice of a new settlement location. A migrant faces a set of M destination categories, and in our study, M = 8. The probability of migrant i choosing destination category m is given by

$$P_{im} = \frac{\mathbf{exp}\left(\delta_{m}^{'}X_{i}\right)}{\sum_{k=1}^{M}\mathbf{exp}\left(\delta_{k}^{'}X_{i}\right)} \tag{5}$$

where X_i reflects the personal attributes of migrant i along with some location characteristics pertaining to the state chosen by migrant i, and δ is the vector of parameters to be estimated. The model is estimated using the Newton-Raphson maximum likelihood method.

The variables

The migration choice of a utility-maximizing individual is jointly determined by personal attributes and location characteristics.

Personal attributes

Young – a dummy variable: 1 if an individual is less than 40 years of age; 0 otherwise.

Gender – a dummy variable: 1 if male and 0 if female.

Marital status – a dummy variable: 1 if married and 0 otherwise.

School attending status – a dummy variable: 1 if attending school, and 0 otherwise.

Personal earning dummies – This series of dummy variables is created roughly based on the federal income tax brackets. Low-income dummy variable (1 if annual income/earnings do not exceed 25,000 USD and 0 otherwise), lower-middle-income dummy variable (1 if annual income/earnings are between 25,000 USD and 50,000 USD and 0 otherwise), middle-income dummy variable (1 if annual income/earnings are between 50,000 USD and 100,000 USD and 0 otherwise), upper-middle-income dummy variable (1 if annual income/earnings are between 100,000 USD and 200,000 USD and 0 otherwise), and high-income dummy variable (1 if annual income/earnings exceed 200,000 USD and 0 otherwise).

English proficiency dummies – *Eng1*, 1 if the individual does not speak English well, and 0 otherwise; *Eng2*, 1 if the individual speaks English well, and 0 otherwise; *Eng3*, 1 if the individual speaks English very well, and 0 otherwise; *Eng4*, 1 if the individual speaks English only, and 0 otherwise. The base category represents the individuals who do not speak English at all.

Educational attainment dummies – *Edu1*, 1 if the individual has a high school diploma, and 0 otherwise; *Edu2*, 1 if the individual acquired some education beyond high school but it was not enough to get a bachelor's degree,[6] and 0 otherwise; *Edu3*, 1 if the individual has a bachelor's degree, and 0 otherwise; *Edu4*, 1 if the individual has a master's degree or professional degree or a doctorate degree beyond his bachelor's degree, and 0 otherwise. The base category represents the individuals who do not even have a high school diploma.

Citizenship status – We include two dummy variables for this attribute: *cit* (1 if the individual was born with U.S. citizenship and 0 otherwise) and *nat* (1 if the individual acquired U.S. citizenship through naturalization and 0 otherwise). If both *cit* and *nat* have the value 0, that means the individual is an immigrant without U.S. citizenship.

Location characteristics

Many of the location characteristics are drawn from the migration literature. We bring two novelties to the literature in this regard. First, we borrow the idea from spatial econometrics and create the *Neighbouring Hispanic Community* variable. Next, to mitigate omitted-variable bias, we generate more observable location characteristics from the *Places Rated Almanac*.

Hispanic community (HC) – This measures the Hispanic population in the state of an observed Hispanic individual's residence. For example, if an individual currently resides in Texas, the corresponding value of HC is the total number of Hispanics living in Texas. The data are generated from 1-year ACS PUMS data files. Minorities, especially new immigrants with little experience in the U.S., are tied to the co-ethnic community for economic and social support such as information, suitable housing, employment opportunities, easier communication, and less culture shock, etc. As they become more assimilated in U.S. society, they should become less reliant on the social networks in the co-ethnic community, and the effect of this variable is expected to become smaller.

Neighbouring Hispanic community (NHC) – This measure is the spatially weighted average of Hispanics living in the neighbouring states, obtained by multiplying a spatial weight matrix (W) by the *Hispanic community* (HC) variable, namely, W· HC. More specifically,

$$W = \begin{pmatrix} 0 & w_{12} & \dots & w_{1n} \\ w_{21} & 0 & \dots & w_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ w_{n1} & w_{n2} & \dots & 0 \end{pmatrix} \tag{6}$$

where $\boldsymbol{w_{ij}}$ defines the functional form of the spatial weight between the pair of states i and j. We employ a combined contiguity and inverse-distance weight matrix, so that NHC gives the

[6]According to the US Census, such education may be any of the following: (1) A GED or alternative credentials; (2) Attended some college, but less than a year; (3) One or more years of college credit, but no degree; (4) An Associate's degree.

inverse-distance weighted Hispanic population in neighbouring states. Specifically, $w_{ij} = \frac{9}{d_{ij}}$ for adjacent states, where d_{ij} is the distance between state i and state j, measured by the distance between their principal cities. If state i and state j do not share a common border, **wij** = 0. In addition, the shortest bilateral distance within the sample (i.e., the 9 miles between Newark and New York City) receives a weight of unity. For example, if a Hispanic individual currently resides in Texas, the corresponding value of the NHC variable is the inverse-distance weighted average of the Hispanic populations in New Mexico, Oklahoma, Arkansas and Louisiana.

For readers who wonder if there might be high degree of correlation between the HC and NHC variables, we present their descriptive statistics in Table A1 and the pairwise correlation between the two variables in Table A2 in the Appendix. The correlation coefficient for *Hispanic Community* and *Neighbouring Hispanic Community* is as low as 0.0557.

Distance – This measure is the shortest flying distance between the principal cities of the origin state and the destination state. It reflects the relocation cost and is expected to deter migration.

Income per capita – The data source is the Bureau of Economic Analysis. A state with higher income per capita has the capability to provide more and better public goods and is supposed to attract people. It is worth noting that a state with high income per capita tends to have not only desirables such as more entertainment, quality health care and education, but also undesirables such as congestion problems and higher housing prices. When evaluating trade-offs and making location choices, individuals with different attributes and preferences may make totally different choices. Some individuals may pick the high income state for its high quality health care and education, while others may avoid the same state because of its intimidating housing prices. Scott, Coomes, and Izyumov (2005) found that the estimated effects of location factors can be reversed when personal attributes are accounted for. The effect of income per capita on an individual's migratory behaviour cannot be predicted. The same logic applies to the population density variable described below.

Population density – We use the population density (ratio of population to land size) to reflect a state's urbanization level. The population data are from the U.S. Census Bureau. The data on land size are from the world atlas.

In addition, we generate nine other location characteristics based on the information provided in the *Places Rated Almanac* (Savageau 2007), which are *ambience, housing, jobs, crime, transportation, education, health care, recreation*, and *climate*. About 80% of people live in the 379 officially-defined metropolitan areas. We measure these nine variables in the following way. If a state has at least one of the 20 most appealing cities for a certain aspect (e.g., ambience), then we assign a value of 1 to this variable and 0 otherwise. Savageau (2007) thoroughly describes the way in which the metro areas are evaluated and scored for each of the nine aspects mentioned above.

IV. Estimation results

Hispanics' departure choices

The estimation results of the departure choice model are presented in Table 2. *Hispanic Community* and *Neighbouring Hispanic Community* are both negative and statistically significant at the 1% level. Specifically, a one-million increase in the number of Hispanics in a state would lower the probability of Hispanics migrating out by 0.0017. A one-million increase in the number of Hispanics in neighbouring states would lower the probability of Hispanics migrating out by 0.00086. These results reveal that Hispanics are less likely to leave the Hispanic-concentrated regions than Hispanic-sparse regions, which is evidence that does not support Hispanic dispersion.

The effects of personal attribute variables expose the migration selection. The young, the single and the male are more foot-loose. Consistent with spatial assimilation theory, the higher the educational attainment, the more mobile the Hispanics. While gaining some English-speaking ability decreases the probability of migrating, very good English proficiency enables Hispanics to be more mobile. In terms of citizenship status, Hispanics born with U.S. citizenship are the most mobile, as expected, since they should be fluent in English and the most

Table 2. Estimation Results from the Departure Choice Model.

VARIABLES	(1) Point Estimates	(2) Marginal Effects
Young	0.6973***	0.01083***
	(0.0159)	(0.00024)
Male	0.3062***	0.00505***
	(0.0143)	(0.00024)
Married	−0.1750***	−0.00289***
	(0.0146)	(0.00024)
Attending School	−0.0094	−0.00015
	(0.0232)	(0.00038)
English level 1	−0.1434***	−0.00226***
	(0.0334)	(0.00050)
English level 2	−0.0896***	−0.00144***
	(0.0342)	(0.00053)
English level 3	0.0706**	0.00118**
	(0.0335)	(0.00056)
English level 4	0.2206***	0.00383***
	(0.0359)	(0.00066)
Educational Attainment 1	0.0424**	0.00071**
	(0.0213)	(0.00036)
Educational Attainment 2	0.2904***	0.00509***
	(0.0209)	(0.00039)
Educational Attainment 3	0.6764***	0.01447***
	(0.0253)	(0.00069)
Educational Attainment 4	0.8655***	0.02102***
	(0.0328)	(0.00112)
Lower Middle Income	−0.4349***	−0.00651***
	(0.0182)	(0.00025)
Middle Income	−0.5469***	−0.00748***
	(0.0267)	(0.00030)
Upper Middle Income	−0.4490***	−0.00611***
	(0.0519)	(0.00057)
High Income	−0.5937***	−0.00753***
	(0.1027)	(0.00097)
Naturalized	−0.0981***	−0.00157***
	(0.0258)	(0.00040)
Born with Citizenship	0.1312***	0.00216***
	(0.0211)	(0.00034)
Hispanic Community	−0.1030***	−0.00170***
	(0.0025)	(0.00004)
Neighbouring Hispanic Community	−0.0518***	−0.00086***
	(0.0157)	(0.00026)
Observations	1,266,155	1,266,155
Control Variables	Yes	Yes
Year FE	Yes	Yes
% moving	1.7%	1.7%

Notes: The control variables include *income per capita, population density, ambience, housing, jobs, crime, transportation, education, health care, recreation*, and *climate. Hispanic Community* and *Neighbouring Hispanic Community* are in units of 1,000,000. Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

assimilated into U.S. culture and society, and thus should have the least difficulty in relocating. What might not be expected is that the Hispanic immigrants who are naturalized are less likely to move than the ones who have not obtained citizenship. The somewhat counter-intuitive findings in relation to a certain English-speaking ability and citizenship through naturalization are in fact consistent with the duration-of-residence effects mentioned in Newbold (1999). As immigrants put down roots and adjust to their new surroundings, the likelihood of subsequent migration should decrease. Looking into various income categories, we find out that low income Hispanics are the most mobile, a finding that is consistent with that in Newbold (1999) where people below the poverty line are more likely to out-migrate. High income Hispanics are the least likely to move.

Hispanics' location choices – Estimation of location choice model I

Among the 1,266,155 Hispanics in our sample, a total of 21,575 migrated to a different state. Through the location choice models, we examine the pull effects of the destinations. Tables 3A, 3B and 3C report the results from estimating Location Choice Model I. Table 3A includes only key location characteristics. In Tables 3B and C, each personal attribute is entered respectively as interactions with key location characteristics.

Hispanic Community and *Neighbouring Hispanic Community* are both positive and statistically significant at the 1% level. *Distance* is negative and statistically significant at the 1% level. The results indicate that Hispanic-concentrated states and their nearby states draw migrants in and migrants do not like to move far from their current state. By combining these findings with the departure choice results, we find that Hispanics are more likely to leave Hispanic-sparse states, and when they migrate, they are attracted to Hispanic-concentrated states. The empirical evidence suggests that the domestic migration of Hispanics leads to agglomeration.

Next, we explore the role that the socioeconomic status of Hispanics has played in shaping the redistribution pattern. The interactions of *Distance* and personal attributes in Table 3B reveal that the deterrent effect of distance is increasingly weakened for Hispanic migrants with better English proficiency, higher educational attainment, higher income, and

Table 3A. Estimation Results from Location Choice Model I.

Variables of Interest	
Distance	−0.069***
	(0.001)
Hispanic Community	0.116***
	(0.002)
Neighbouring Hispanic Community	0.373***
	(0.015)
Control Variables	Yes
Year Effects	No
Observations	21575

Table 3B. Estimations of Location Choice Model I – spatial assimilation check.

(1) Including Interactions with English Proficiency		(2) Including Interactions with Educational Attainment		(3) Including Interactions with Personal Earnings		(4) Including Interactions with Citizenship Status	
Distance	−0.080***	Distance	−0.094***	Distance	−0.071***	Distance	−0.081***
	(0.004)		(0.002)		(0.001)		(0.002)
Hispanic Community	0.118***	Hispanic Community	0.103***	Hispanic Community	0.115***	Hispanic Community	0.106***
	(0.006)		(0.003)		(0.002)		(0.003)
Neighbouring Hispanic Community	0.281***	Neighbouring Hispanic Community	0.295***	Neighbouring Hispanic Community	0.342***	Neighbouring Hispanic Community	0.332***
	(0.045)		(0.024)		(0.016)		(0.021)
Distance x English level 1	−0.008	Distance x Education level 1	0.018***	Distance x Lower Middle Income	0.004	Distance x Naturalization	0.018***
	(0.005)		(0.003)		(0.003)		(0.004)
Distance x English level 2	0.003	Distance x Education level 2	0.031***	Distance x Middle Income	0.009**	Distance x Born with Citizenship	0.017***
	(0.005)		(0.003)		(0.004)		(0.002)
Distance x English level 3	0.016***	Distance x Education level 3	0.045***	Distance x Upper Middle Income	0.012		
	(0.005)		(0.003)		(0.008)		
Distance x English level 4	0.019***	Distance x Education level 4	0.051***	Distance x High Income	0.029*		
	(0.005)		(0.004)		(0.017)		
Hispanic Community x English level 1	−0.011	Hispanic Community x Education level 1	0.008*	Hispanic Community x Lower Middle Income	0.000	Hispanic Community x Naturalization	0.026***
	(0.007)		(0.005)		(0.004)		(0.005)
Hispanic Community x English level 2	−0.005	Hispanic Community x Education level 2	0.014***	Hispanic Community x Middle Income	0.013**	Hispanic Community x Born with Citizenship	0.012***
	(0.007)		(0.004)		(0.005)		(0.003)
Hispanic Community x English level 3	0.006	Hispanic Community x Education level 3	0.022***	Hispanic Community x Upper Middle Income	0.006		
	(0.006)		(0.005)		(0.012)		
Hispanic Community x English level 4	−0.008	Hispanic Community x Education level 4	0.031***	Hispanic Community x High Income	0.055**		
	(0.006)		(0.006)		(0.023)		
Neighbouring Hispanic Community x English level 1	0.082	Neighbouring Hispanic Community x Education level 1	0.087***	Neighbouring Hispanic Community x Lower Middle Income	0.050**	Neighbouring Hispanic Community x Naturalization	0.150***
	(0.052)		(0.030)		(0.025)		(0.031)
Neighbouring Hispanic Community x English level 2	0.111**	Neighbouring Hispanic Community x Education level 2	0.059***	Neighbouring Hispanic Community x Middle Income	0.147***	Neighbouring Hispanic Community x Born with Citizenship	0.035
	(0.051)		(0.028)		(0.031)		(0.023)
Neighbouring Hispanic Community x English level 3	0.120***	Neighbouring Hispanic Community x Education level 3	0.167***	Neighbouring Hispanic Community x Upper Middle Income	0.236***		
	(0.046)		(0.031)		(0.057)		
Neighbouring Hispanic Community x English level 4	0.063	Neighbouring Hispanic Community x Education level 4	0.148***	Neighbouring Hispanic Community x High Income	0.065		
	(0.048)		(0.039)		(0.153)		
Control Variables	Yes	Control Variables	Yes	Control Variables	Yes	Control Variables	Yes
Year Effects	No	Year Effects	No	Year Effects	No	Year Effects	No
Observations	21575	Observations	21575	Observations	21575	Observations	21575

citizenship. Hispanics with higher socioeconomic status face less difficulty relocating farther away from their previous residence, which is consistent with the spatial assimilation hypothesis. On the other hand, the interactions of *Hispanic Community* and personal attributes appear to offer evidence that is not in support of the spatial assimilation hypothesis, as higher educational attainment and citizenship causes a Hispanic migrant to be more attached to Hispanic-concentrated states. This puzzle is solved in our estimation of Location Choice Model II in the next sub-section. In addition, we find that the young and the male are less tied to the Hispanic community. The male is less willing to move farther away from his previous residence, while the young, the married, and the school-attending Hispanics are less deterred by distance in their relocation.

Hispanics' location choices – Estimation of location choice model II

The estimation results of Location Choice Model II are presented in Table 4. For the sake of space, we report only the marginal effects, while point estimates are available at request. Please refer to Appendix Table A3 for the classification of states based on Hispanic population. *Neighbouring Hispanic Community (NHC)* is clearly the most important factor in determining a Hispanic migrant's choice of category in terms of Hispanic concentration. The extraordinarily large effect of *NHC* is the negative effect on the eighth category (the two most concentrated states, California and Texas). Specifically, a million more Hispanics in neighbouring states reduces the likelihood of a Hispanic migrant choosing these states by 1.38. The congestion effect is noteworthy. In sharp contrast, the increase in *NHC* raises the probability of

Table 3C. Estimations of Location Choice Model I – more personal attributes examined.

(1) Including Interactions with Age		(2) Including Interactions with Gender		(3) Including Interactions with Marital Status		(4) Including Interactions with School Attending Status	
Distance	−0.072***	Distance	−0.066***	Distance	−0.072***	Distance	−0.071***
	(0.002)		(0.002)		(0.001)		(0.001)
Hispanic Community	0.121***	Hispanic Community	0.122***	Hispanic Community	0.118***	Hispanic Community	0.116***
	(0.003)		(0.003)		(0.003)		(0.002)
Neighbouring Hispanic Community	0.367***	Neighbouring Hispanic Community	0.399***	Neighbouring Hispanic Community	0.423***	Neighbouring Hispanic Community	0.369***
	(0.021)		(0.018)		(0.017)		(0.015)
Distance x Young	0.005**	Distance x Male	−0.006***	Distance x Married	0.006***	Distance x Attending School	0.016***
	(0.002)		(0.002)		(0.002)		(0.003)
Hispanic Community x Young	−0.007**	Hispanic Community x Male	−0.011***	Hispanic Community x Married	−0.004	Hispanic Community x Attending School	0.004
	(0.003)		(0.003)		(0.003)		(0.005)
Neighbouring Hispanic Community x Young	0.007	Neighbouring Hispanic Community x Male	−0.048***	Neighbouring Hispanic Community x Married	−0.121***	Neighbouring Hispanic Community x Attending School	0.030
	(0.021)		(0.019)		(0.020)		(0.030)
Control Variables	Yes	Control Variables	Yes	Control Variables	Yes	Control Variables	Yes
Year Effects	No	Year Effects	No	Year Effects	No	Year Effects	No
Observations	21575	Observations	21575	Observations	21575	Observations	21575

Notes (for Table 3A-C): The control variables include income per capita, population density, ambience, housing, jobs, crime, transportation, education, health care, recreation, and climate. Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

a Hispanic migrant choosing the next four categories. More importantly, the largest positive effect of *NHC* is on the sixth category, which consists of Arizona, New Jersey, Colorado, New Mexico and Georgia (i.e., the states bordering the top five Hispanic-concentrated states). An increase of one million Hispanics in neighbouring states raises the probability of a migrant choosing the sixth category by 0.61. This is consistent with the findings from Location Choice Model I and makes the previous finding even more specific. These states have large enough Hispanic populations in their own states, and the top five Hispanic-concentrated states (California, Texas, Florida, New York and Illinois) naturally constitute large *NHC* for them. Moreover, the Hispanic population in these states has not reached a level high enough to cause congestion. Therefore, it is not surprising that Hispanic migrants are drawn to such states more than to other states.

Furthermore, Table 4 shows that an increase of one million Hispanics in neighbouring states reduces the likelihood of a Hispanic migrant choosing those Hispanic-sparse states. Specifically, the probability of choosing the first category (a Hispanic population below 20,000) is reduced by 0.11 and the probability of choosing the second category (a Hispanic population of between 20,000 and 100,000) by 0.13. The negative effect of *NHC* on the third category is much smaller, being only 0.076. We have known already that the effect of *NHC* turns positive for the fourth category onward until the congestion effect shows up for the eighth category. These results suggest that the larger Hispanic community in neighbouring states in fact has a diverting effect on the Hispanics in those very Hispanic-sparse states. Only when the Hispanic population in the own state reaches a threshold level can the larger Hispanic population in neighbouring states help attract migrants. This is another piece of evidence that does not support the spatial dispersion of Hispanics.

To sum up, all the evidence points to spatial agglomeration of Hispanics, while the congestion effect tends to weaken the agglomeration in the most concentrated states and Hispanics tend to spill over from the most concentrated states to their nearby states.

Now let us turn to the check of spatial assimilation theory again. Since the better educated are less likely to choose Hispanic-sparse categories two and three whereas they are more likely to choose Hispanic-dense category seven, the results from Location Choice Model II do not contradict the previous results from Location Choice Model I that better educated Hispanics appear more attracted to large Hispanic communities in general. However, the more specific results here reveal that the better educated migrants are not truly tied to the Hispanic community. Higher educational attainment makes Hispanic migrants more likely

Table 4. Estimation of Location Choice Model II – Marginal Effects.

	(1) HC Category	(2) HC Category	(3) HC Category	(4) HC Category	(5) HC Category	(6) HC Category	(7) HC Category	(8) HC Category
Young	0.00193*	−0.00057	0.01019***	0.01412***	0.01780***	−0.01368***	−0.03724***	0.00745
	(0.00105)	(0.00231)	(0.00352)	(0.00512)	(0.00543)	(0.00518)	(0.00551)	(0.00532)
Male	0.00111	0.00545***	−0.00016	0.00059	−0.00703	0.01022**	−0.00378	−0.00638
	(0.00104)	(0.00206)	(0.00336)	(0.00482)	(0.00512)	(0.00463)	(0.00485)	(0.00492)
Married	−0.00067	0.00231	0.00033	−0.00104	0.02019***	0.00732	−0.01971***	−0.00873*
	(0.00102)	(0.00209)	(0.00326)	(0.00473)	(0.00504)	(0.00461)	(0.00481)	(0.00483)
English level 1	0.00043	−0.00326	0.00381	0.01341	−0.00749	−0.00288	0.00579	−0.00981
	(0.00343)	(0.00410)	(0.00733)	(0.01124)	(0.01145)	(0.01135)	(0.01284)	(0.01120)
English level 2	0.00592	−0.00534	0.00653	0.00860	−0.01686	−0.01204	0.02768**	−0.01450
	(0.00506)	(0.00408)	(0.00779)	(0.01156)	(0.01139)	(0.01138)	(0.01369)	(0.01157)
English level 3	0.00312	−0.00509	0.00002	0.00426	−0.01327	0.01105	0.01346	−0.01356
	(0.00366)	(0.00429)	(0.00731)	(0.01093)	(0.01163)	(0.01153)	(0.01247)	(0.01137)
English level 4	0.00336	−0.00179	0.00496	0.02884**	−0.01270	0.03243***	−0.04424***	−0.01086
	(0.00382)	(0.00472)	(0.00810)	(0.01229)	(0.01235)	(0.01258)	(0.01203)	(0.01224)
Educational Attainment 1	−0.00033	0.00102	0.00768	−0.01689**	0.01260	−0.00037	0.01717**	−0.02088***
	(0.00141)	(0.00294)	(0.00480)	(0.00673)	(0.00797)	(0.00714)	(0.00800)	(0.00735)
Educational Attainment 2	−0.00061	−0.00427	0.00838*	−0.01623**	0.01144	−0.00601	0.03192***	−0.02462***
	(0.00133)	(0.00273)	(0.00473)	(0.00664)	(0.00761)	(0.00676)	(0.00755)	(0.00714)
Educational Attainment 3	−0.00235	−0.00781**	−0.00297	−0.00544	0.01763*	−0.01496*	0.04995***	−0.03405***
	(0.00149)	(0.00309)	(0.00585)	(0.00818)	(0.00947)	(0.00810)	(0.00978)	(0.00837)
Educational Attainment 4	0.00270	−0.00445	−0.01585**	−0.00428	0.00395	−0.00190	0.03265***	−0.01282
	(0.00317)	(0.00422)	(0.00723)	(0.01056)	(0.01183)	(0.01070)	(0.01232)	(0.01080)
Lower Middle Income	0.00004	−0.00398	0.00349	0.00222	0.01271*	−0.00151	−0.00859	−0.00438
	(0.00128)	(0.00248)	(0.00423)	(0.00606)	(0.00653)	(0.00580)	(0.00593)	(0.00616)
Middle Income	−0.00122	0.00141	0.00824	0.00658	0.00320	−0.00477	−0.02661***	0.01316
	(0.00185)	(0.00412)	(0.00692)	(0.00923)	(0.00934)	(0.00803)	(0.00784)	(0.00900)
Upper Middle Income	−0.00382	−0.00680	0.02386	−0.01021	0.05471***	−0.01516	−0.03238**	−0.01020
	(0.00246)	(0.00657)	(0.01585)	(0.01830)	(0.02068)	(0.01521)	(0.01469)	(0.01746)
High Income	0.01032	0.00648	−0.01806	−0.02681	−0.04093	0.01153	0.06719*	−0.00973
	(0.01343)	(0.01961)	(0.02798)	(0.03598)	(0.03379)	(0.03366)	(0.03630)	(0.03259)
Naturalized	0.00548*	−0.00290	−0.01197**	−0.02030**	−0.01462*	−0.00421	0.03391***	0.01461
	(0.00325)	(0.00385)	(0.00556)	(0.00810)	(0.00866)	(0.00835)	(0.00943)	(0.00893)
Born with Citizenship	0.00330**	0.00223	−0.02060***	−0.02716***	−0.01118	0.00218	0.04081***	0.01041
	(0.00155)	(0.00295)	(0.00492)	(0.00695)	(0.00731)	(0.00674)	(0.00675)	(0.00717)
Neighbouring Hispanic Community	−0.11299***	−0.12966***	−0.07594***	0.11958***	0.51067***	0.61001***	0.45721***	−1.37888***
	(0.01456)	(0.01194)	(0.01235)	(0.01562)	(0.01606)	(0.01260)	(0.01418)	(0.04295)

Notes: Standard errors are in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The estimation of this model does not allow all the control variables, and thus only population density and job are used.

to choose the seventh category (Florida, New York and Illinois) but less likely to choose the eighth category (California and Texas) and the sixth category (the states bordering the top five concentrated states). Clearly, co-ethnicity is not the reason for them to choose the seventh category. It is possible that they are attracted to states with a larger variety of highly-skilled job opportunities, New York and Illinois happen to be the locations that host most of the high-skill-intensive industries. In addition, native English speakers are less likely to choose the seventh and eighth categories, but more likely to choose the fourth and sixth categories. This further investigation corrects for potential misperception from the previously general results and offers some evidence in support of the spatial assimilation theory. It should be noted, though, that the findings in this subsection continue to indicate that citizenship makes Hispanic migrants more attracted to large co-ethnic communities.

V. Conclusion

This paper attempts to investigate the spatial redistribution pattern of Hispanics by focusing on the role of internal migration. We use a binary logit model, a conditional logit model and a multinomial model to study the migratory behaviour of Hispanics aged between 22 and 64. By analysing the inter-state migration of Hispanics based on ACS PUMS 2007–2012 data, we find that co-ethnicity is the most important determinant of location choice even for internal Hispanic migrants. Citizenship (whether born with or through naturalization) makes Hispanics more attracted to co-ethnic communities. Our findings indicate that domestic migration of Hispanics leads to agglomeration of Hispanics, with the strongest agglomeration occurring in the states bordering the most concentrated states. While the congestion effect tends to weaken the agglomeration in the most concentrated states, the Hispanic-sparse states do not tend to receive Hispanics. The underlying force of potential dispersion is congestion and spillover from the highly concentrated states to their nearby states.

Incorporating personal attributes into the analysis has provided some support for the spatial assimilation theory. Hispanics with higher socioeconomic status are more mobile. Evidence indicates that the better educated are less tied to the largest Hispanic community, as they are less likely to choose the most concentrated states and more likely to choose those states that happen to house more highly-skilled and more higher-paid jobs. This study has generated some policy implications. By being bordered with large Hispanic populations, states are very likely to bring in Hispanics. It is worth noting that this study focuses on domestic migration, and thus the inflow of Hispanics does not take into consideration immigrants coming in directly from foreign countries. The paper helps state governments better understand how likely it would be that their states would experience significant inflows of Hispanics. Depending on local economic needs, state governments could therefore adjust their policies accordingly.

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Appendix

Table A1. Descriptive Statistics for Hispanic Community and Neighbouring Hispanic Community.

Variable	Mean	Std. Dev.	Min	Max
Hispanic Community	901264	2229890	6616	13100000
Neighbouring Hispanic community	230672	499094	3487	3207462

Table A2. Pairwise Correlation between Hispanic Community and Neighbouring Hispanic Community.

	Hispanic Community	Neighbouring Hispanic community
Hispanic Community	1	
Neighbouring Hispanic community	0.0557	1

Table A3. Classification of the States under Study by Their Hispanic Population.

States	Hispanic Population (2007–2012 average)	HC Category
California/CA	13,887,732	8
Texas/TX	9,307,552	8
Florida/FL	4,112,651	7
New York/NY	3,356,465	7
Illinois/IL	2,011,396	7
Arizona/AZ	1,954,284	6
New Jersey/NJ	1,510,507	6
Colorado/CO	1,030,980	6
New Mexico/NM	932,695	6
Georgia/GA	828,197	6
North Carolina/NC	751,724	5
Washington/WA	716,594	5
Nevada/NV	704,447	5
Pennsylvania/PA	674,018	5
Massachusetts/MA	602,110	5
Virginia/VA	590,960	5
Connecticut/CT	459,388	4
Oregon/OR	438,180	4
Maryland/MD	434,236	4
Michigan/MI	427,141	4
Indiana/IN	361,275	4
Utah/UT	348,009	4
Ohio/OH	331,348	4
Wisconsin/WI	313,997	4
Oklahoma/OK	312,781	4
Kansas/KS	283,593	4
Tennessee/TN	265,742	4
Minnesota/MN	236,026	4
South Carolina/SC	211,715	4
Missouri/MO	199,651	3
Louisiana/LA	174,673	3
Arkansas/AR	173,645	3
Idaho/ID	169,205	3
Nebraska/NE	158,795	3
Alabama/AL	158,678	3
Iowa/IA	139,334	3
Rhode Island/RI	129,035	3
Kentucky/KY	116,169	3
Mississippi/MS	67,603	2
Delaware/DE	67,512	2
District of Columbia/DC	55,015	2
Wyoming/WY	46,752	2
New Hampshire/NH	36,972	2
Montana/MT	28,474	2
South Dakota/SD	22,058	2
West Virginia/WV	21,430	2
Maine/ME	15,747	1
North Dakota/ND	13,316	1
Vermont/VT	8,350	1